

MOISTURE RELATIONS OF PEACH BUDS DURING WINTER AND SPRING.

By EARL S. JOHNSTON.

[Author's abstract.]

The moisture index is a term applied to the quotient obtained by dividing the moisture content of peach fruit buds by their dry weight. It is thus the ratio of moisture content to dry weight, or the amount of moisture per unit of dry matter.

The moisture indices of three peach varieties studied in the year 1921-22 show low winter values with increasingly high spring values. These values throughout most of the winter and spring are highest for the Late Crawford, lowest for the Greensboro, and intermediate for the Elberta variety. This index seems to be correlated with bud hardiness in these three varieties; the higher the index the less hardy the variety.

An apparent correlation was indicated between the moisture index in spring and the temperature of incipient ice formation within the buds when artificially cooled in the laboratory.

Fruit buds were found to depend directly on the roots of the trees for their moisture in early autumn, while in midwinter water in the tree served as an adequate source.

The rate of increase in the moisture index after January 1 was found to vary on five different years as the sum of the effective daily mean temperatures above 43° F. Although the factor of proportionality is a constant for any one year, it may vary for different years. Certain conditioning influences, such as the amount and distribution of rainfall, that are operative during or preceding dormancy apparently "predetermine" the exact relationship between air temperature and the moisture index of the buds for the period following dormancy.

The relation between the moisture index and the effective temperatures is expressed as a straight line equation, $y = a + bx$. The constant a is of little significance, but seems to be related to rainfall during dor-

mancy. The constant b varies with the variety and at the same time seems to reflect rainfall conditions during the preceding June, July, August, and September.

THE MARINE OBSERVER.

Under the above title the British Meteorological Office has recently issued the first number of a magazine devoted to marine meteorology and published especially in the interests of the observers who cooperate with that office by furnishing meteorological and hydrographical observations made at sea.

The functions of the new publication are described as follows: "To provide information useful to navigation concerning winds, weather, climate, currents, derelicts, and ice; to stimulate interest in observation and the practice of meteorology at sea; to promote the use of wireless weather reporting for shipping; to provide a means whereby mariners may give their experience to others; and to foster the traditions of marine meteorology upon international lines." The new publication will in a measure take the place of the well and favorably known British Monthly Meteorological Charts, the periodical publication of which has been discontinued. Hereafter these charts will be used only to portray the more or less permanent meteorological and hydrographical features of the oceans.

In a "foreword" by Dr. G. C. Simpson, director of the Meteorological Office, credit is given to Capt. L. A. Brooke Smith, marine superintendent, for suggesting the idea of the magazine and carrying the project into effect. Doctor Simpson pays a graceful and well-merited tribute to the corps of marine observers who have contributed so much to the general knowledge of meteorological science.

There is a wealth of material in the initial number and the typographical appearance is pleasing. Altogether the new venture is one that is sure to meet with the hearty approval of all those interested in marine meteorology.—*F. G. T.*

BIBLIOGRAPHY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Meteorologist in Charge of Library.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies:

Alkindus.

De temporum mutationibus, siue de imbris, nunquam antea excussus. Parisiis. 1540. 25 p. 26 cm.

Arnell, H. Wilh.

Vegetationens årliga utvecklingsgång i Svealand. Stockholm. 1923. 79 p. 32 cm. (Meddelanden från statens met.-hydrog. anstalt. Bd. 2, n:o 1.)

Bertholon de Saint-Lazare.

De l'électricité des météores. . . v. 1-2. Lyon. 1787. 2 v. plates. 20 cm.

Besson, Louis.

Aperçu historique sur la classification des nuages. Paris. 1923. 20 p. 31 cm. (Memorial de l'Office nat. mét. de France. 1re année. no. 2.)

Dechevrens, Marc.

Étude du vent à Jersey (dans la Manche). Vingt années d'observations (1895-1914) à l'Observatoire Saint-Louis. Paris. 1923. 55 p. figs. 31 cm. (Memorial de l'Office nat. mét. de France. 1re année. no. 3.)

Felleus, T. B.

Manuel de météorologie, ou explication théorique et démonstrative des phénomènes connus sous le nom de météores. . . Paris. 1828. 382 p. plates. 13 cm.

France. Office national météorologique.

Radiogrammes météorologiques d'intérêt général émis par les postes de T. S. F. de la France de l'Afrique du Nord française et de la Syrie. Liste des émissions et tableau de déchiffrement. ed. 2. Paris. 1923. 50 p. 24 cm.

Fromond, Libertus.

Meteorologicorum libri sex. Antverpiæ. 1627. 420 p. illus. 23 cm.

Garcaeus, Johann.

Meteorologia conscripta . . . Additæ sunt tabellæ quæ totam meteororum doctrinam complectuntur. . . Witebergæ. 1568. 463 p. 16½ cm.

Goutereau, [Charles].

Notice climatologique sur Toulouse. Paris. 1923. 15 p. diagr. 31 cm. (Memorial de l'Office nat. mét. de France. 1re année. no. 4.)

Hector observatory.

Earthquakes in New Zealand [by George Hogben, rev. by J. Henderson.] Wellington. 1923. 8 p. diagr. 25½ cm. (Bulletin no. 51.)

Hennert, [Johann Friedrich.]

Traité des thermomètres. Ou il est parlé d'une nouvelle loi de la chaleur, propre à mesurer la dilatation des liqueurs. La Haye. 1758. xvi, 171 p. plate. 15½ cm.